

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
5 February 2004 (05.02.2004)

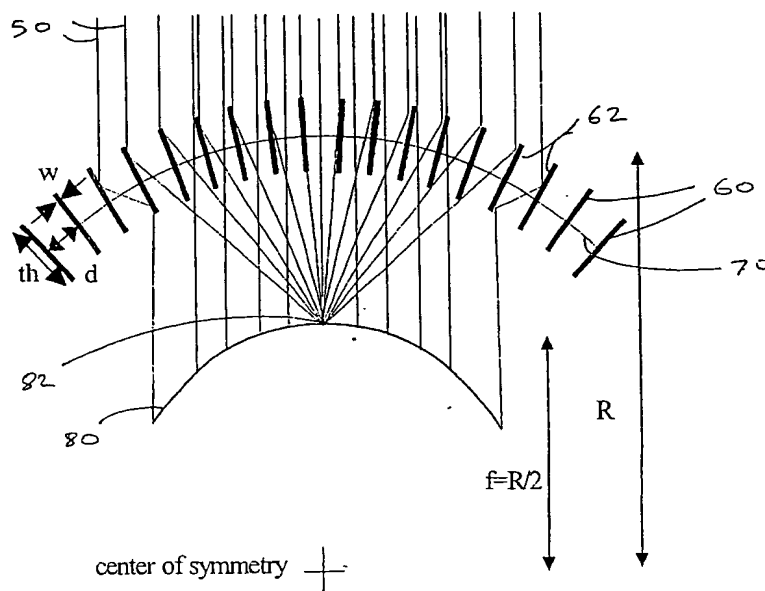
PCT

(10) International Publication Number
WO 2004/012207 A2

- (51) International Patent Classification⁷: **G21K** Warwick CV34 5TD (GB). **MENZER, Stephan** [DE/GB]; 19 Regent Street, Horbury, Wakefield, West Yorkshire WF4 6EP (GB). **HUDEC, Rene** [CZ/CZ]; Vinohradska 36, 120 00 Praha (CZ).
- (21) International Application Number: **PCT/GB2003/003286**
- (22) International Filing Date: **28 July 2003 (28.07.2003)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data: **60/398,599** **26 July 2002 (26.07.2002)** **US**
- (71) Applicant (for all designated States except US): **BEDE PLC** [GB/GB]; Belmont Business Park, Durham DH1 1TW (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **INNEMAN, Adolf** [CZ/CZ]; K Lesu 965, 142 00 Praha (CZ). **PINA, Ladislav** [CZ/CZ]; Nad Lesnim Divadlem 14, 142 00 Praha (CZ). **BOWEN, David, Keith** [GB/GB]; 30 Oakwood Grove,
- (74) Agent: **MURGITROYD & COMPANY**; Scotland House, 165-169 Scotland Street, Glasgow G5 8PL (GB).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: OPTICAL DEVICE



(57) Abstract: The invention provides a miniaturized multi-foil object for use in a laboratory environment and other practical applications that require small or portable and/or disposable high energy radiation optics. Specifically, the invention finds utility in high energy lithographic systems, such as X-ray or EUV lithography, as a condenser optic or in topographic systems. In lithographic systems, the present invention exhibits superior symmetry, aperture size, and disposability. Additionally, the multi-foil optic of the invention provides a high throughput efficiency, which is advantageous in many applications.

WO 2004/012207 A2